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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,499	05/18/2005	Takeo Fujita	1163-0512PUS1	3898
2292 7590 12/19/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER HSU, AMY R	
			ART UNIT	PAPER NUMBER
			2622	
			NOTIFICATION DATE	DELIVERY MODE
			12/19/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/535,499

Applicant(s)

FUJITA ET AL.

Examiner

Amy Hsu

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/18/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/1/2007, 5/18/2006, 5/18/2005.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 5467129).

Regarding Claim 1, Suzuki teaches an image pickup apparatus provided with a solid state image pickup device and a data compression means (*Fig. 1 reference number 22, "data compression processing unit"*) for compressing a video signal (*Col 3 Lines 33-34, "video still cameras, movie cameras"*) acquired by said solid state image pickup device, characterized in that said image pickup apparatus comprises: a characteristic value calculation means for extracting a characteristic value (*Fig. 1 reference number 28, high pass filter, extracts a high frequency component of the signal*) used for predicting an amount of codes to be generated at a time of compressing a video signal acquired by said solid state image pickup device from the video signal (*the data from reference number 28 corresponds to or predicts the type of compression which is the amount of codes to be generated at a time – i.e. low, medium, high compression*); and a compression coefficient control means (*Fig. 1 reference number 32, "compression factor selection unit"*) for controlling a compression coefficient which is used by said data compression means based on the characteristic

value acquired by said characteristic value calculation means (*Col 3 Line 53-Col 4 Line 3*). Suzuki teaches the compression coefficient control means (*reference number 32*) uses the extracted high frequency component characteristic value from the HPF but fails to teach it occurs at the a time before image pick-up so as to allow users to check an image before the image is captured ,or during preview or moving mode. Suzuki teaches the compression coefficient is determined by the compression factor selection unit (*reference number 32*) but fails to teach it occurs at the time of image pickup.

Suzuki teaches that when the compression factor is determined, the factor is displayed by the display unit (*Col 4 Lines 40-44*). Suzuki also teaches inputs to the control unit (*reference number 35, 36a, 36b*) that the user has control over and which changes the compression factor). One skilled in the art recognizes that information displayed on a display unit is to give the user control and options. Therefore since Suzuki displays the compression factor on the display unit, it can be for the purpose of allowing the user to change the compression factor. This must occur before the user preferred image is captured in order to allow this option to the user. Since Suzuki teaches the factor is displayed to the user it would have been obvious to one of ordinary skill in the art at the time of the invention to realize to allow the user the option of accepting or changing the factor, and once the user chooses, the compression coefficient is determined and the image is then picked up. Suzuki teaches the system interfaces with the user by displaying the determined compression factor to the user, rather than processing with no options or accessibility by the user. Therefore it would

have been obvious to extend the options to the user and allow the user to determine the compression factor before capturing the preferred image.

Regarding Claim 4, Suzuki teaches the image pickup apparatus according to claim 1, characterized in that said compression coefficient control means determines a data compression factor according to the output of the high pass filter which extracts a characteristic of the image, the high frequency component. Table 1 in Col 5 shows a list of compression factors which relate to the output of the characteristic value acquisition means. The table taught by Suzuki is very broad and more to show the general relationship between the factors, however one of ordinary skill in the art would realize that the list can be much more detailed giving a specific high frequency component relating to a specific numerical value of a compression factor. Suzuki fails to teach the limitation of Claim 4. However, one of ordinary skill in the art would recognize the well known ability of a digital camera to be connected to external device to update its capability.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Suzuki to rewrite such a list of coefficients through communication with external equipment because methods and capabilities of image processing software is constantly changing and a portable device such as a digital camera can efficiently be updated by communicating with external equipment.

Claim 5 is a method enabling the limitations of Claim 1 and is therefore rejected with the same art and rationale.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 5467129) in view of Murata et al. (US 5428391).

Regarding Claim 2, Suzuki teaches the image pickup apparatus according to claim 1 where a characteristic value, high frequency component, is calculated from an image pickup area, with a compression coefficient control means (*reference number 32*) which is used by data compression means (*reference number 22*) based on characteristic value acquisition means (*reference number 28, high pass filter*). However, Suzuki does not teach the image pickup area is divided into two or more areas and characteristic values determined for both to determine the compression coefficient used by the compression means.

Murata teaches an image pickup system. Murata teaches extracting a high frequency component for each of a plurality of divided areas of the image pickup area (*Col 9 Lines 5-11*). Although the purpose of Murata is for auto focus, Murata is referenced to teach the concept of dividing an image pickup area into several areas and extracting a high frequency component from each.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Suzuki with that of Murata to realize an image pickup apparatus which splits the image pickup area into two or more areas and

determines a characteristic on each area. Since an image area to be captured can consist of varying levels of detail for example it can include a monotonous color sky in addition to fine details of a person's face, it would have been obvious to split the area into several areas for the purpose of comparing the areas to find the area with highest frequency component. The area among a divided image pickup area with the highest frequency component is the area with the maximum characteristic value since Suzuki teaches the characteristic value is high frequency. This area with highest frequency indicates the area of the picture with greater detail which indicates a higher compression factor is necessary to achieve best quality. Therefore it would have been obvious to use this method to find the maximum detail in the picture and compress the entire image to the standard of the area with highest detail in order for the compression factor to satisfy the most detailed area of the image with greatest quality.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 5467129) in view of Okada et al. (US 2003/0179942),

Regarding Claim 3, Suzuki teaches the image pickup apparatus according to claim 1 but does not teach the limitations of Claim 3.

Okada teaches the well known concept of determining a scene change which capturing video signals. The high frequency component, or characteristic value acquired, is compared between consecutive frames in order to determine a scene change. If between two frames, the high frequency component is the same, as

determined by the characteristic value calculation means, or HPF, then the two frames will have the same compression factor. However, if the high frequency component is different from one frame to another, as determined by comparing two or more stored frames' characteristic value, then a correction to the value needs to be made in order to determine the appropriate compression factor for each frame.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Suzuki with that of Okada to realize an image pickup apparatus that will react to the difference in high frequency component between frames in order to appropriately compress each frame with most efficiency. For example when the scene changes to a monotonous image such as a blue sky the apparatus can react by changing to a lower compression factor.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kohashi et al. (US 2004/0091145) teaches a camera with a signal processing system.

Tanji (US 5748258) teaches a video signal processing apparatus with detail signal generator and compression circuit.

Suzuki (US 7253836) teaches a CCD which captures a subject that is compressed with a compression circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy Hsu whose telephone number is 571-270-3012.

The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on 571-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amy Hsu
Examiner
Art Unit 2622

ARH 12/7/07


TUAN HO
PRIMARY EXAMINER